



Chuck McLaughlin
<cmclaugh@demaximis.com>

06/07/2004 11:04 AM

To Christopher Lichens/R9/USEPA/US@EPA

cc Dave Chamberlin <chamberlindc@cdm.com>, Sharon Wallin
<wallinsl@cdm.com>

bcc

Subject Deep Well Memo, Omega Site

Chris:

In accordance with our discussion on Friday, please reference attachment relative to the installation of the deep well.

If you have any questions, please call me



Chuck Deep WellMemo - 1.pdf



Memorandum

To: Chuck McLaughlin

From: Sharon Wallin

Date: June 7, 2004

*Subject: USEPA Request for Installation of Additional Deeper Well
Omega Chemical Superfund Site*

In comments dated October 15, 2003 to the Draft Report Addendum for Additional Data Collection in the Phase 1A Area (CDM, June 27, 2003), USEPA requested installation of a deeper well downgradient of well OW1b. Currently, deeper wells have been installed at the Terra Pave facility (OW1b) and further downgradient on Washington Boulevard (OW4b). Due to elevated levels of VOCs and 1,4-dioxane detected in the shallow water table zone at the location of well OW8, OPOG concurs that installation of a deeper well is warranted. OPOG proposes to install the new deeper well (OW9) on Putnam Street, in close proximity to OW8.

Well installation and development will be as described in the prior sampling and analysis plan developed for the project (Downgradient Well Installation and Groundwater Monitoring Sampling and Analysis Plan [Downgradient SAP], CDM, April 20, 2001). Based on drilling experience obtained at well location OW4b, the mud rotary drilling method will be used to advance the well boring. The Downgradient SAP does not describe mud rotary drilling, so additional details are provided below regarding mud rotary drilling. A temporary steel surface casing will be installed in order to stabilize near-surface soil during drilling. In addition, to minimize the threat of cross-contamination from the shallow to the deeper zone, 12-inch diameter mild steel conductor casing will also be installed to a depth of approximately 80 to 85 feet bgs. The conductor casing will be terminated in fine-grained materials (e.g., silts or clays), if possible.

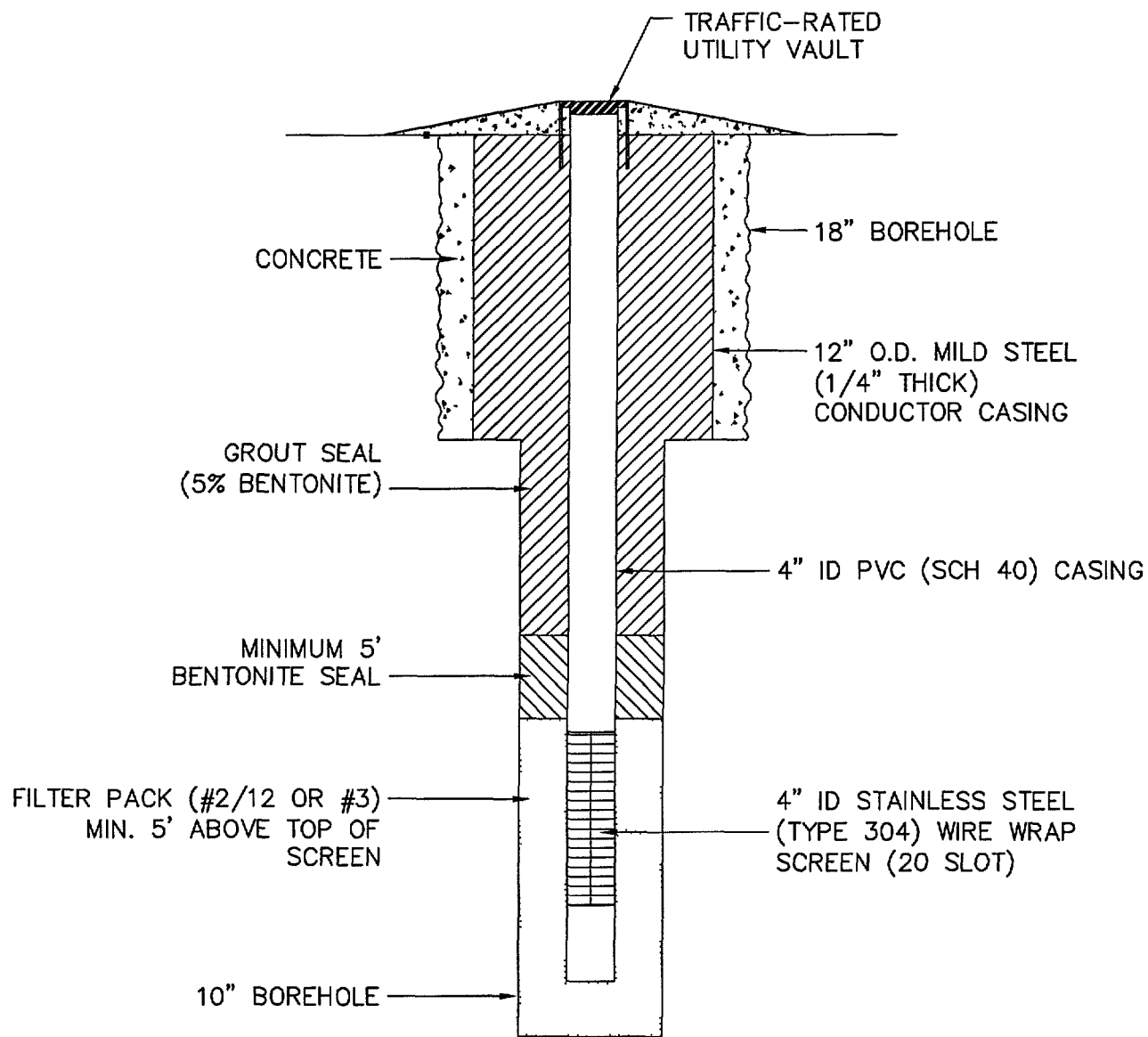
Both the conductor casing boring and the well boring will be advanced using a mud rotary drilling rig. Soil cuttings samples will be collected for lithologic evaluation every five feet or at changes in lithology. The drilling fluid will be pure bentonite mixed with potable water, and the use of additives will not be allowed. The 18-inch diameter conductor casing boring will be advanced first, and the 12-inch diameter conductor casing will be installed and cemented in place. Steel centralizers will be placed at the bottom of the conductor casing, and also at approximate 40-foot intervals. The cement seal will be allowed to remain undisturbed overnight, followed by advancement of a 10-inch diameter boring to the proposed total depth of the well the next day.

Prior to installation of the well casing and screen, the drilling fluid will be thinned using potable water. The well will be constructed using 4-inch diameter, schedule 40 PVC blank casing and 10 feet of 20 slot stainless-steel, wire-wrap screen installed in the approximate interval from 110 to 120 feet bgs. If lithologic materials adjacent to the screened section are relatively finer-grained (e.g., fine sands and silts), a No. 2/12 filter pack will be installed. If materials are relatively coarser-grained (e.g., medium to coarse sands and gravels), a No. 3 filter pack will be used. The filter pack will be placed using temporary tremmie pipe, and will extend five feet above the top of the screen. A three-foot thick Volclay™ bentonite seal will be installed on top of the filter pack, and the remainder of the annulus will be filled with neat cement with 5% bentonite added. The surface completion will utilize a traffic-rated utility vault, and locking water-tight well cap. Typical well construction details are illustrated in the attached figure.

The well will be developed by bailing, swabbing, and pumping following installation. Development will be performed in accordance with the Well Development Standard Operating Procedure contained in Appendix C of the Downgradient SAP. During development, water quality parameters including temperature, pH, electrical conductivity, and turbidity will be monitored and recorded on the Monitoring Well Development Log. Field equipment will be operated in accordance with the procedures contained in Appendix D of the Downgradient SAP.

The well will be purged using a decontaminated portable submersible pump approximately one week following development. Following purging, a sample will be collected for laboratory analysis. Well purging and sampling will be performed as described in Section 2 of the Sampling and Analysis Plan Addendum for Additional Data Collection in the Phase 1a Area (SAP Addendum). Field parameters collected during purging will be recorded on the Monitoring Well Purge and Sampling Form (see Appendix B of the Downgradient SAP for both development and sampling field forms). After purging is complete, the portable pump will be removed from the well and a new bailer used to collect a sample for laboratory analysis. The sample will be analyzed for VOCs (8260B) and 1,4-dioxane (8270M). Laboratory quality assurance/quality control will be performed as described in Section 3 of the SAP Addendum. Upon completion of sampling, the new polyethylene tubing used to sample the well will be placed in the well and dedicated for subsequent sampling of the well.

Soil cuttings, development water, and decontamination fluids will be temporarily contained in portable bins, tanks, or drums, and disposed as described in Section 2.5 of the Downgradient SAP.



OMEGA CHEMICAL

**Typical Construction Diagram for
Conventional Monitoring Well**

CDM

Figure 1